REMARKS/ARGUMENTS

In response to the Official Action mailed January 23, 2009, Applicants amend their application and request reconsideration. In this Amendment, claim 3 is cancelled cancelled, leaving claims 1, 2, and 4-10 pending.

Request to Withdraw Finality of Rejection

Pursuant to a telephone interview initiated by Applicants' representative on February 2, 2009, Applicants respectfully request withdrawal of the finality of the rejection. As stated in the Office Action mailed January 23, 2009, the Examiner was responding to a Request for Continued Examination. According to MPEP 706.07(b) a first action final rejection is proper in the present situation if the RCE is directed to the same invention after the claim amendment and the amended claims presented upon the filing of the RCE could have been properly rejected *on the* grounds and *art of record* if the RCE in submission had been entered in the application before the filing of the RCE.

The conditions set forth in the MPEP for a first-action final rejection are not satisfied in this instance and, therefore, the finality of the rejection is premature. The claims presented upon the filing of the RCE could not have been rejected based upon the art of record as demonstrated by the Office Action mailed January 23, 2009. In that Office Action, one publication is cited for the first time, namely JP 2002-156192 to Hirohata (hereinafter Hirohata). This publication was not "art of record." Further, each of the prior art rejections made in rejecting the claims presented for examination relies upon Hirohata in combination with other previously cited publications, i.e., art of record.

Since the action taken by the Examiner in citing and relying upon a new publication in rejecting the claims shows that the amended claims, entered upon the filing of the RCE, could not have been rejected based upon the art of record, that condition for the issuance of a first-action final rejection set forth in MPEP 706.07(b)

is not fulfilled. The finality is therefore premature and Applicants respectfully request its withdrawal, entry of the foregoing Amendment, and appropriate action with respect to the claims presented here in view of the arguments that follow. It is understood from the telephone interview that the Examiner, upon further consideration, concurs with the conclusion that the finality of the rejection was likely premature.

Claim Amendments

In the foregoing claim amendments an inadvertent and unfortunate error in claim 1, not mentioned in the Office Action, is corrected. It is apparent that the first side end of the cut-raised portion cannot be longer than itself. Clearly, it was intended to state that the first side end is longer than the second side end. That correction is made and additional changes are made in the fourth paragraph of claim 1 for clarity. In addition, further limitations from examined claim 3 are further restricted and added at the end of amended claim 1. Claim 3 required only one of the edges to extend obliquely to the column direction. Amended claim 1 requires both edges to extend obliquely to the column direction. Therefore, claim 3 is cancelled. As previously explained, the claims presented in this patent application encompass, but are not limited to, the embodiments of Figures 15-17 of the patent application. Of course, these figures must be construed in conjunction with the entire disclosure of the patent application, all of which supports the claims now pending.

Prior Art Rejections

Claims 1, 2, 5, 6, and 8-10 were rejected as unpatentable over Fujinami (JP 11-118380) in view of Baek et al. (U.S. Patent 5,947,194, hereinafter Baek) and further in view of Hirohata. In view of the incorporation of the limitation of claim 3 into claim 1, this rejection appears to be moot.

Claims 3 and 4 were rejected as unpatentable over Fujinami in view of Baek and Hirohata, and further in view of Satou (JP 10-339594). Presumably it is this prior

art rejection which now potentially may be applied to independent claim 1, the only pending independent claim.

Claim 7 was rejected as unpatentable in view of the references applied in rejecting claim 1 and further in view of Lu (U.S. Patent 4,821,795). This rejection likewise seems moot or dependent upon the propriety of the potential prior art rejection of the amended claim 1 that is responded to here. Thus, there is no detailed further discussion with respect to the rejection of claim 7.

Response to Rejections

As previously explained, the claims presented here are particularly supported by the description in the patent application concerning the embodiments of Figures 15-17, although the claims are not limited to those embodiments. Nevertheless, the embodiments of those figures are useful in understanding the claims. Considering the upper third of Figure 15, it is seen that the cut-raised portion is given reference number 3. The cut-raised portion includes two legs, indicated by double lines, where the cut-raised portion remains attached to the main body of the fin 1. Those parts of the cut-raised portions are referred to in the claims as first and second side ends. Those side ends are opposed to each other and one of those side ends is longer than the other. According to the clarified form of claim 1, that first side end, which is closer to the corresponding tube, is longer than the second side end.

The other edges of the trapezoidally-shaped cut-raised portion are edges that are disconnected from the main body of the fin 1. Those edges are indicated by single lines at two boundaries of the trapezoidally-shaped cut-raised portions in Figures 15-17. According to examined claim 3 and, as more strongly stated in amended claim 1, both of those edges are oblique to the column direction. The column direction, as defined in claim 1, in the patent application, and in the embodiment of Figure 15, extends vertically, parallel to the edges of the fin 1, in that figure.

While Applicants agree that many of the elements of amended claim 1 are shown in various parts of the four publications applied in rejecting examined claim 3,

no suggestion is found within any of those publications for assembling a heat exchanger as described in amended claim 1.

In Fujinami, there is no deflection of any flowing cooling fluid, such as air, with respect to the heat exchanger tubes because all of the cut-raised portions are exactly rectangular with side ends and edges of identical length in each rectangular cut-raised portion. Fujinami may meet some of the most generalized limitations of the claims, but fails to meet the specific limitations.

Baek was apparently relied upon with respect to its Figures 6 and 9, although the Office Action is exceedingly limited in its explanation of the prior art rejection. At least some of the cut-raised portion shown in Figures 6 and 9 of Baek are trapezoidal but the trapezoids are entirely symmetrical. While those cut-raised portions have edges of different lengths, the side ends are of the same length in each cut-raised portion. Thus, there cannot be, as in the claimed invention, a longer side edge that is closer to the corresponding tube than the second side edge. The deflection of the air flow provided by the cut-raised portions is different in Baek than in the claimed invention and cannot provide the same frost prevention advantages achieved in the invention.

Hirohata presents somewhat confusing figures, of which only Figures 2-4 seem potentially pertinent to the claimed invention. The structure shown in Figure 5 is clearly contrary to and unrelated to the present invention.

Figures 3 and 4 of Hirohata are incomplete because the cut-raised portions extend to the edge of a fin 1. As a result, those figures cannot be reliably compared to any pending claim. Thus, the pertinent figure in Hirohata is Figure 2. Cut-raised portions there pertaining to particular tubes seem to be trapezoidal with respect to cut-raised portions 3(a) and rectangular with respect to cut-raised portions 3 and 5. Thus, only the cut-raised portion 3a is potentially pertinent to the claimed invention. That cut-raised portion includes edges that are parallel to, not oblique to, the column direction. Moreover, the first side end is not angled as in the invention, i.e., does not deflect the cooling air or fluid in the same direction as the invention so that Hirohata

cannot suggest the arrangement of cut-raised portions as described in amended claim 1.

Stated more specifically, in Hirohata, a plate 1 includes upstream cut-raised portions 3a. These portions 3a forcibly supply a flow of the cooling fluid, corresponding to the second fluid of the claims, to the heat exchanger tubes 2. A side wall 4e of each of the cut-raised portions that is disposed near the corresponding heat exchanger tube extends towards the center of that corresponding heat exchanging tube 2. Thus, the cut-raised portions 3a provide guidance that increases the amount of the second fluid that is directed toward the heat exchanger tubes.

By contrast with what is described by Hirohata, in the structure according to claim 1, the first side end is disposed at a further downstream side of the flow of the second fluid than is the second side end of the cut-raised portion. Moreover, the first side end faces the corresponding heat exchanger tube and is longer than the second side end of the same cut-raised portion. Further, both of the first and second edges extend obliquely relative to the column direction of the heat exchanger. Therefore, in the structure according to the invention, at a position near the corresponding heat exchanger tube, the heat transfer area of the cut-raised portion is larger than in the Hirohata heat exchanger. As a result, the heat that is transferred by the second fluid to the cut-raised portions smoothly and promptly flows toward the heat exchanger tubes so that the heat transfer performance of the structure according to the invention is better than the heat transfer structure of Hirohata. Further, by contrast with Hirohata, in the structure according to claim 1, the cut-raised portions do not guide the second fluid toward the surfaces of the heat exchanger tubes. Therefore, both the structure and the function of the heat exchanger according to claim 1 are different from anything described or suggested in Hirohata.

Finally, Satou describes only rectangular cut-raised portions that are arranged along the column direction or that are arranged radially with respect to respective tubes. There is no description of any cut-raised portion that is trapezoidal as in the invention, so that Satou cannot meet the limitations of amended claims 1 and 10.

While Applicants recognize that the prior art rejections are based upon combinations of the four applied references, there is no teaching or suggestion in the prior art for the highly selective picking and choosing that would be required to assemble a structure falling within the scope of the invention as defined by amended claim 1, and the remaining pending dependent claims. Therefore, the prior art relied upon cannot establish *prima facie* obviousness of any pending claim. Upon reconsideration, the rejections should be withdrawn and the remaining claims allowed.

Conclusion

Withdrawal of the finality of the rejections in the Office Action and reconsideration of the prior art rejections, in view of the amendments and arguments presented here, along with allowance of the remaining pending claims, are earnestly solicited.

Respectfully submitted,

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